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EXAMINER	
KHAN, USMAN A	

ART UNIT	PAPER NUMBER
2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/648,445	BEAN ET AL.	
	Examiner	Art Unit	
	USMAN KHAN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 August 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. Applicant's argument filed on 04/02/2009 with respect to claims 1 - 28 have been considered but are moot in view of the new ground(s) of rejection.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 - 2, 12 - 13, 24 - 25, and 27 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US patent No. 2003/0193593) in view of Vernier (US patent No. 2004/0036778).

Regarding **claim 1,** Lee et al. discloses a method of selectively reading less than all information available at an output of an image sensor for which member-pixels of a subset of an entire set of pixels are individually addressable (figures 1 - 3 and Paragraph 0016), the method comprising: sampling information, at the output of the image sensor, representing targeted member-pixel of the subset without having to read information representing the entire set of pixels (figures 1 - 3 and Paragraph 0016 *et seq.*); and selectively reading information, at the output of the image sensor, representing another one or more but fewer than all member pixels of the entire set

based upon the sampling information without having to read information representing all pixels on the image sensor (figures 1 - 3 and Paragraph 0016 *et seq.*), all pixels on the image sensor, wherein each pixel can be individually read, independently of other pixels (Lee et al. uses a CMOS imager and it is inherent that CMOS imagers have a property of being able to reading any single pixel separately; title and figures 2 – 5 "X-Y ADDRESSABLE IMAGER"); accessing a first set of sampling photo sensing pixels of the image sensor and accessing a second set of non-sampling pixels of the image sensor, wherein the first and the second set of pixels have different physical circuitry addressing and control line going to them, respectively (figure 2 and paragraph 0015 circuits 23 and 26 reading the sub-window image; figure 3 and paragraph 0016 circuits 34 and 36 reading the sub-window image whereas imager 12 can be read as a whole also using address/shift registers in figures 2 - 3).

However, Lee et al. fails to disclose organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the subset, respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions. Vernier, on the other hand teaches organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the subset, respectively; and reading the static partitions once and the dynamic partitions

multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions.

More specifically, Vernier teaches organizing the entire set of pixels into dynamic and static partitions (figures 3 - 5 items 310 and 320), each partition having multiple pixels (figures 3 - 5 items 310 and 320); mapping one or more of the partitions to one or more of the member-pixels of the subset (figures 3 - 5 items 310 and 320; when Vernier is combined with Lee et al. a portion of 310 and/or 320 will fall within the subset of Lee et al.), respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions (paragraphs 0019 - 0021; also, figures 3 - 5 items 310 and 320).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Vernier with the teachings of Lee et al. to speed up and reduce cost and time required of the photographing system by ignoring stationary portions of images after the initial image capture.

Regarding **claim 2**, as mentioned above in the discussion of claim 1, Lee et al. in view of Vernier teach all of the limitations of the parent claim. Additionally, Lee et al. teaches the reading information, at the output of the image sensor, representing member-pixels of the entire set that are located within a predetermined area adjacent to or surrounding the targeted member-pixel of the subset (figures 1 - 3 and Paragraph 0016 *et seq.*).

Regarding **claim 12**, as mentioned above in the discussion of claim 1, Lee et al. in view of Vernier teach all of the limitations of the parent claim. Additionally, Lee et al. teaches the image sensor is **one of a** CCD image sensor for which the subset is smaller than the entire set **and** a CMOS image sensor for which the subset is the same as the entire set (column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26; note: only one of a CCD or a CMOS is required because of the claim wording).

Regarding **claim 13,** Lee et al. discloses a method of selectively reading data available at an output of an image sensor, the method comprising: reading less than all data available at an output of an image sensor for which selected ones but not all of the entire set of pixels are individually addressable (figures 1 - 3 and Paragraph 0016 *et seq.*), wherein each pixel can be individually read, independently of other pixels (Lee et al. uses a CMOS imager and it is inherent that CMOS imagers have a property of being able to reading any single pixel separately; title and figures 2 – 5 “X-Y ADDRESSABLE IMAGER”); accessing a first set of sampling photo-sensing pixels of the image sensor and accessing a second set of non-sampling pixels of the image sensor, wherein the first and the second set of pixels have different physical circuitry addressing and control lines going to them, respectively (figure 2 and paragraph 0015 circuits 23 and 26 reading the sub-window image; figure 3 and paragraph 0016 circuits 34 and 36 reading the sub-window image whereas imager 12 can be read as a whole also using address/shift registers in figures 2 - 3).

However, Lee et al. fails to disclose organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the subset, respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions. Vernier, on the other hand teaches organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the subset, respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions.

More specifically, Vernier teaches organizing the entire set of pixels into dynamic and static partitions (figures 3 - 5 items 310 and 320), each partition having multiple pixels (figures 3 - 5 items 310 and 320); mapping one or more of the partitions to one or more of the member-pixels of the subset (figures 3 - 5 items 310 and 320; when Vernier is combined with Lee et al. a portion of 310 and/or 320 will fall within the subset of Lee et al.), respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions (paragraphs 0019 - 0021; also, figures 3 - 5 items 310 and 320).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Vernier with the teachings of Lee et al.

to speed up and reduce cost and time required of the photographing system by ignoring stationary portions of images after the initial image capture.

Regarding **claim 24,** Lee et al. discloses a digital camera (it is inherent this kind of CMOS imagers are used in cameras and it is inherent that the method for correcting pixels can be implemented in the camera for reduction of size and ease of use) comprising: a pixel-differentiated image sensor for which member-pixels of a subset of the entire set of pixels are individually addressable (figures 1 - 3 and Paragraph 0016 *et seq.*), the image sensor being controllable to read less than all of the pixels without having to read all of the pixels (figures 1 - 3 and Paragraph 0016 *et seq.*); and a processor operable to obtain sampling information from a targeted member-pixel of the subset without having to read information from the entire set of pixels (figures 1 - 3 and Paragraph 0016 *et seq.*); and selectively obtain information from another one or more but fewer than all member pixels of the entire set based upon the sampling information without having to read all of the pixels on the image sensor (figures 1 - 3 and Paragraph 0016 *et seq.*), wherein each pixel can be individually read, independently of other pixels (Lee et al. uses a CMOS imager and it is inherent that CMOS imagers have a property of being able to reading any single pixel separately; title and figures 2 – 5 “X-Y ADDRESSABLE IMAGER”); a first set of sampling photo-sensing pixels of the Image sensor; and a second set of non-sampling pixels of the image sensor; wherein the first and the second set of pixels have different physical circuitry addressing and, control lines. going to them, respectively (figure 2 and paragraph 0015 circuits 23 and 26

reading the sub-window image; figure 3 and paragraph 0016 circuits 34 and 36 reading the sub-window image whereas imager 12 can be read as a whole also using address/shift registers in figures 2 - 3).

However, Lee et al. fails to disclose organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the subset, respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions. Vernier, on the other hand teaches organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the subset, respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions.

More specifically, Vernier teaches organizing the entire set of pixels into dynamic and static partitions (figures 3 - 5 items 310 and 320), each partition having multiple pixels (figures 3 - 5 items 310 and 320); mapping one or more of the partitions to one or more of the member-pixels of the subset (figures 3 - 5 items 310 and 320; when Vernier is combined with Lee et al. a portion of 310 and/or 320 will fall within the subset of Lee et al.), respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of

images corresponding in time to more frequently read partitions (paragraphs 0019 - 0021; also, figures 3 - 5 items 310 and 320).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Vernier with the teachings of Lee et al. to speed up and reduce cost and time required of the photographing system by ignoring stationary portions of images after the initial image capture.

Regarding **claim 25**, as mentioned above in the discussion of claim 24, Lee et al. in view of Vernier teach all of the limitations of the parent claim. Additionally, Lee et al. teaches the processor is operable to selectively obtain information from member-pixels of the entire set that are located within a predetermined area adjacent to or surrounding the targeted member-pixel of the subset (figures 1 - 3 and Paragraph 0016 *et seq.*).

Regarding **claim 27,** Lee et al. discloses a digital camera (it is inherent this kind of CMOS imagers are used in cameras and it is inherent that the method for correcting pixels can be implemented in the camera for reduction of size and ease of use) comprising: a pixel-differentiated image sensor for which selected ones of the entire set of pixels are individually addressable (figures 1 - 3 and Paragraph 0016 *et seq.*), the image sensor being organized into a matrix of partitions (figures 1 - 3 and Paragraph 0016 *et seq.*), each partition including a member-pixel of the subset referred to as a sampling pixel (figures 1 - 3 and Paragraph 0016 *et seq.*); and a processor operable to obtain sampling data from a sampling pixel without having to obtain information from the

other pixels in the corresponding partition (figures 1 - 3 and Paragraph 0016 *et seq.*), and selectively obtain data from at least the entire corresponding partition but fewer than all of the partitions depending upon the sampled-data without having to obtain information from all of the pixels on the image sensor (figures 1 - 3 and Paragraph 0016 *et seq.*), wherein each pixel can be individually read, independently of other pixels (Lee et al. uses a CMOS imager and it is inherent that CMOS imagers have a property of being able to reading any single pixel separately; title and figures 2 – 5 “X-Y ADDRESSABLE IMAGER”); access a first set of sampling photo-sensing pixels of tile image sensor and access a second set of non-sampling pixels of the image sensor, wherein the first; and the second set of pixels have different physical circuitry addressing and control lines going to them, respectively (figure 2 and paragraph 0015 circuits 23 and 26 reading the sub-window image; figure 3 and paragraph 0016 circuits 34 and 36 reading the sub-window image whereas imager 12 can be read as a whole also using address/shift registers in figures 2 - 3).

However, Lee et al. fails to disclose organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the subset, respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions. Vernier, on the other hand teaches organizing the entire set of pixels into dynamic and static partitions, each partition having multiple pixels; mapping one or more of the partitions to one or more of the member-pixels of the

subset, respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions.

More specifically, Vernier teaches organizing the entire set of pixels into dynamic and static partitions (figures 3 - 5 items 310 and 320), each partition having multiple pixels (figures 3 - 5 items 310 and 320); mapping one or more of the partitions to one or more of the member-pixels of the subset (figures 3 - 5 items 310 and 320; when Vernier is combined with Lee et al. a portion of 310 and/or 320 will fall within the subset of Lee et al.), respectively; and reading the static partitions once and the dynamic partitions multiple times and processing extra partition-read requests for creating a series of images corresponding in time to more frequently read partitions (paragraphs 0019 - 0021; also, figures 3 - 5 items 310 and 320).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Vernier with the teachings of Lee et al. to speed up and reduce cost and time required of the photographing system by ignoring stationary portions of images after the initial image capture.

Regarding **claim 28**, as mentioned above in the discussion of claim 27, Lee et al. in view of Vernier teach all of the limitations of the parent claim. Additionally, Lee et al. teaches the processor is operable to selectively obtain data from partitions located within a predetermined area adjacent to or surrounding the sampling pixel (figures 1 - 3 and Paragraph 0016 *et seq.*).

3. Claims 3 – 9, 14 – 20, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US patent No. 2003/0193593), in view of Vernier (US patent No. 2004/0036778), and further in view of YONEYAMA (JP 04313949 A).

Regarding **claims 3**, as mentioned above in the discussion of claim 2, Lee et al. in view of Vernier teach all of the limitations of the parent claims. However, Lee et al. in view of Vernier fail to disclose reading information, at the output of the image sensor, representing all member-pixels of the subset so as to generate a plurality of samples; handling the samples in a manner that preserves a relationship between each sample and corresponding member-pixel of the subset; and reading information, at the output of the image sensor, representing one or more of the partitions mapped to the member-pixels of the subset but not all of the partitions based upon the plurality of samples. YONEYAMA, on the other hand teaches reading information, at the output of the image sensor, representing all member-pixels of the subset so as to generate a plurality of samples; handling the samples in a manner that preserves a relationship between each sample and corresponding member-pixel of the subset; and reading information, at the output of the image sensor, representing one or more of the partitions mapped to the member-pixels of the subset but not all of the partitions based upon the plurality of samples.

More specifically, YONEYAMA teaches reading information, at the output of the image sensor, representing all member-pixels of the subset so as to generate a plurality

of samples (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively); handling the samples in a manner that preserves a relationship between each sample and corresponding member-pixel of the subset (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively when combined with the teaching of Lee et al.); and reading information, at the output of the image sensor, representing one or more of the partitions mapped to the member-pixels of the subset but not all of the partitions based upon the plurality of samples (paragraph 0023).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of YONEYAMA with the teachings of Lee et al. in view of Vernier because in paragraph 0007 YONEYAMA teaches that the invention is used to obtain a wide dynamic range without being restricted by the dynamic range of light interception element of image sensor, so as to solve the problems of the known devices.

Regarding **claims 4**, as mentioned above in the discussion of claim 1, Lee et al. in view of Vernier teach all of the limitations of the parent claims. However, Lee et al. in view of Vernier fail to disclose determining if the sampling information exceeds a reference value; and reading information, at the output of the image sensor, representing the one or more but fewer than all member-pixels of the entire set if the sampling information exceeds the reference value. YONEYAMA, on the other hand teaches determining if the sampling information exceeds a reference value; and reading

information, at the output of the image sensor, representing the one or more but fewer than all member-pixels of the entire set if the sampling information exceeds the reference value.

More specifically, YONEYAMA teaches determining if the sampling information exceeds a reference value; and reading information, at the output of the image sensor, representing the one or more but fewer than all member-pixels of the entire set if the sampling information exceeds the reference value (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of YONEYAMA with the teachings of Lee et al. in view of Vernier because in paragraph 0007 YONEYAMA teaches that the invention is used to obtain a wide dynamic range without being restricted by the dynamic range of light interception element of image sensor, so as to solve the problems of the known devices.

Regarding **claims 5**, as mentioned above in the discussion of claim 4, Lee et al. in view of Vernier and in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches wherein the reference value represents one of a user-determined threshold or a saturation threshold for the targeted member-pixel of the subset (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively).

Regarding **claims 6**, as mentioned above in the discussion of claim 4, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches reading information, at the output of the image sensor, representing all member-pixels of the subset so as to generate a plurality of samples (figure 6 and paragraphs 0022 et seq.; picture elements A, B and C respectively), each member-pixel of the subset having a corresponding reference value, respectively (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C); applying the determining step to each of the samples (paragraph 0017; calculation in terms of standard value); and reading information, at the output of the image sensor, representing the one or more but fewer than all member-pixels of the entire set located within a predetermined area adjacent to or surrounding member-pixels for which the corresponding sample exceeds the respective reference value (paragraph 0023).

Regarding **claims 7**, as mentioned above in the discussion of claim 4, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches the sampling information is the current sampling information (figure 6 and paragraphs 0022 et seq.; one of V_A, V_B AND V_C) and the reference value is a first reference value (figure 6 and paragraphs 0022 et seq.; one of V_A, V_B AND V_C); and the method further comprises: taking the difference between the current sampling information and the first reference value (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C); and reading, at the output of the image

sensor, representing the one or more but fewer than all member-pixels of the entire set if the difference exceeds a second reference value (paragraph 0023).

Regarding **claims 8**, as mentioned above in the discussion of claim 7, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches wherein the first reference value is the previous sampling information (figure 6 and paragraphs 0022 et seq.; V_A).

Regarding **claims 9**, as mentioned above in the discussion of claim 7, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches setting the first reference value to be equal to the current sampling information if the difference exceeds the second reference value (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C are variable).

Regarding **claims 14**, as mentioned above in the discussion of claim 13, Lee et al. in view of Vernier teach all of the limitations of the parent claims. However, Lee et al. in view of Vernier fail to disclose organizing the image sensor into a matrix of partitions, each partition including a member-pixel of the subset referred to as a sampling pixel; selectively reading data from at least the entire corresponding partition but fewer than all of the partitions depending upon the sampled-data without having to read all of the pixels on the image sensor. YONEYAMA, on the other hand teaches organizing the image sensor into a matrix of partitions, each partition including a member-pixel of the

subset referred to as a sampling pixel; selectively reading data from at least the entire corresponding partition but fewer than all of the partitions depending upon the sampled-data without having to read all of the pixels on the image sensor.

More specifically, YONEYAMA teaches organizing the image sensor into a matrix of partitions, each partition including a member-pixel of the subset referred to as a sampling pixel (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively); selectively reading data from at least the entire corresponding partition but fewer than all of the partitions depending upon the sampled-data without having to read all of the pixels on the image sensor (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively when combined with the teaching of Lee et al.).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of YONEYAMA with the teachings of Lee et al. in view of Vernier because in paragraph 0007 YONEYAMA teaches that the invention is used to obtain a wide dynamic range without being restricted by the dynamic range of light interception element of image sensor, so as to solve the problems of the known devices.

Regarding **claims 15**, as mentioned above in the discussion of claim 14, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches reading data, at the output of the image sensor, representing partitions located within a predetermined area adjacent to or

surrounding the sampling pixel (figure 6 and paragraphs 0022 et seq.; picture elements A, B and C respectively).

Regarding **claims 16**, as mentioned above in the discussion of claim 14, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches determining If the sampled-data exceeds a reference value; and reading data, at the output of the image sensor, representing the one or more but fewer than all member-pixels of the entire set if the sampled-data exceeds the reference value (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively).

Regarding **claims 17**, as mentioned above in the discussion of claim 16, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches wherein the reference value represents a saturation threshold for the targeted member-pixel of the subset (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively).

Regarding **claims 18**, as mentioned above in the discussion of claim 16, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches the sampling data is the current sampling information (figure 6 and paragraphs 0022 et seq.; one of V_A, V_B AND V_C) and

the reference value is a first reference value (figure 6 and paragraphs 0022 et seq.; one of V_A, V_B AND V_C); and the method further comprises: taking the difference between the current sampling information and the first reference value (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C); and reading, at the output of the image sensor, representing the one or more but fewer than all member-pixels of the entire set if the difference exceeds a second reference value (paragraph 0023).

Regarding **claims 19**, as mentioned above in the discussion of claim 18, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches wherein the first reference value is the previous sampling information (figure 6 and paragraphs 0022 et seq.; V_A).

Regarding **claims 20**, as mentioned above in the discussion of claim 18, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. Additionally, YONEYAMA teaches setting the first reference value to be equal to the current sampling information if the difference exceeds the second reference value (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C are variable).

Regarding **claim 23**, as mentioned above in the discussion of claim 14, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claim. Additionally, Lee et al. teaches the image sensor is **one of a** CCD image sensor for which the subset is smaller than the entire set **and** a CMOS image sensor for

which the subset is the same as the entire set (column 3, lines 32 *et seq.* figures 15A – 15F and 20A – 20B, column 18 lines 20 – 26; note: only one of a CCD or a CMOS is required because of the claim wording).

Regarding **claims 26**, as mentioned above in the discussion of claim 25, Lee et al. in view of Vernier teach all of the limitations of the parent claims. However, Lee et al. in view of Vernier fail to disclose the processor is operable to read information from all member-pixels of the subset so as to generate a plurality Of samples; the processor further being operable to handle the samples in a manner that preserves a relationship between each sample and corresponding member-pixel of the subset, and read information from one or more of the partitions mapped to the member- pixels of the subset but not all of the partitions based upon the plurality of samples. YONEYAMA, on the other hand teaches the processor is operable to read information from all member-pixels of the subset so as to generate a plurality Of samples; the processor further being operable to handle the samples in a manner that preserves a relationship between each sample and corresponding member-pixel of the subset, and read information from one or more of the partitions mapped to the member- pixels of the subset but not all of the partitions based upon the plurality of samples.

More specifically, YONEYAMA teaches the processor is operable to read information from all member-pixels of the subset so as to generate a plurality Of samples (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively); the processor further being operable to handle the samples in a

manner that preserves a relationship between each sample and corresponding member-pixel of the subset (figure 6 and paragraphs 0022 et seq.; V_A, V_B AND V_C of picture elements A, B and C respectively when combined with the teaching of Lee et al.); and read information from one or more of the partitions mapped to the member-pixels of the subset but not all of the partitions based upon the plurality of samples (paragraph 0023).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of YONEYAMA with the teachings of Lee et al. in view of Vernier because in paragraph 0007 YONEYAMA teaches that the invention is used to obtain a wide dynamic range without being restricted by the dynamic range of light interception element of image sensor, so as to solve the problems of the known devices.

4. Claims 10 -11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US patent No. 2003/0193593), in view of Vernier (US patent No. 2004/0036778), and further in view of Horie et al. (US patent No. 6,480,624).

Regarding **claim 10**, as mentioned above in the discussion of claim 1, Lee et al. in view of Vernier teach all of the limitations of the parent claims. However, Lee et al. in view of Vernier fail to disclose that the method further comprises: measuring an elapsed time; reading information at the output of the image sensor representing all member-pixels of the subset if the elapsed time exceeds a predetermined amount. Horie et al.,

on the other hand teaches that method comprises: measuring an elapsed time; reading information at the output of the image sensor representing all member-pixels of the subset if the elapsed time exceeds a predetermined amount.

More specifically, Horie et al. teaches that method comprises: measuring an elapsed time (column 8, lines 58 *et seq.*); reading information at the output of the image sensor representing all member-pixels of the subset if the elapsed time exceeds a predetermined amount (column 8, lines 58 *et seq.*).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Horie et al. with the teachings of Lee et al. in view of Vernier because in column 8, lines 58 *et seq.* Horie et al. teaches that the use of the time controlled image pickup will result exposure control, this will in turn result in a improved image.

Regarding **claim 11**, as mentioned above in the discussion of claim 10, Lee et al. in view of Vernier and in further view of Horie et al. teach all of the limitations of the parent claims. Additionally, Horie et al. teaches multiple instances of the elapsed time at the output of the image sensor representing all member-pixel of the subset can be measured in the next cycle of the image capture (column 8, lines 58 *et seq.*).

5. Claims 21 - 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US patent No. 2003/0193593), in view of Vernier (US

patent No. 2004/0036778) in view of YONEYAMA (JP 04313949 A) further in view of Horie et al. (US patent No. 6,480,624).

Regarding **claim 21**, as mentioned above in the discussion of claim 14, Lee et al. in view of Vernier and further in view of YONEYAMA teach all of the limitations of the parent claims. However, Lee et al. in view of Vernier and further in view of YONEYAMA fail to disclose that the method further comprises: measuring an elapsed time; reading information at the output of the image sensor representing all member-pixels of the subset if the elapsed time exceeds a predetermined amount. Horie et al., on the other hand teaches that method comprises: measuring an elapsed time; reading information at the output of the image sensor representing all member-pixels of the subset if the elapsed time exceeds a predetermined amount.

More specifically, Horie et al. teaches that method comprises: measuring an elapsed time (column 8, lines 58 *et seq.*); reading information at the output of the image sensor representing all member-pixels of the subset if the elapsed time exceeds a predetermined amount (column 8, lines 58 *et seq.*).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Horie et al. with the teachings of Lee et al. in view of Vernier and further in view of YONEYAMA because in column 8, lines 58 *et seq.* Horie et al. teaches that the use of the time controlled image pickup will result exposure control, this will in turn result in a improved image.

Regarding **claim 22**, as mentioned above in the discussion of claim 21,Lee et al. in view of Vernier in view of YONEYAMA and further in view of Horie et al. teach all of the limitations of the parent claims. Additionally, Horie et al. teaches multiple instances of the elapsed time at the output of the image sensor representing all member-pixel of the subset can be measured in the next cycle of the image capture (column 8, lines 58 *et seq.*).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
7. a shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-1131. The examiner can normally be reached on Mon-Fri 6:45-3:15.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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